



## NSF & MASSACHUSETTS

In Fiscal Year (FY) 2019, the **National Science Foundation made \$550,378,000 in awards** to Massachusetts in support of fundamental research, advanced technical education, entrepreneurial training, STEM teacher training, long-term ecological monitoring, small business development, major research instrumentation and more.

### DID YOU KNOW?

**DISCOVERY | The Center for Integrated Quantum Materials at Harvard University** is an NSF Science and Technology Center studying extraordinary new quantum materials with striking “non-conventional” properties. The strategic goal of the center is to push the frontiers of quantum sensors, quantum communication and quantum computation. Importantly, the center’s most significant products are related to developing the quantum information science workforce -- the students and post doctorates that the center trains to enter productive careers that advance the field.



In November 2018, the human-occupied research submersible Alvin made it's 5000th dive.

**Image Credit:** Luis Lamar, © Woods Hole Oceanographic Institution

**STEM WORKFORCE DEVELOPMENT |** With an emphasis on two-year colleges, NSF's Advanced Technological Education (ATE) program focuses on the education of technicians for the high-technology fields that drive the nation's economy. The program involves partnerships between academic institutions and industry to promote improvement in the education of science and engineering technicians at the undergraduate and secondary school levels. At **Bristol Community College**, the New England Water Treatment Training (NEWTT) program will recruit and educate community college students for careers in water treatment and wastewater treatment. With input from academic, industrial and government partners, NEWTT will produce a model curriculum and certificate program that can be delivered in both onsite and online formats, giving students the flexibility to balance career development with their lives.

**SUPPORTING STUDENTS |** NSF's CyberCorps®: Scholarship for Service (SFS) program is a scholarship program designed to recruit and train the next generation of information technology professionals, industry control system security professionals and security managers to meet the needs of the cybersecurity mission for federal, state, local and tribal governments. All scholarship recipients must work after graduation for a federal, state, local or tribal government organization in a position related to cybersecurity for a period equal to the length of the scholarship. **Northeastern University's** SFS program is preparing highly qualified cybersecurity professionals for entry into the government workforce. The university also works with a variety of local community colleges to plan pathways for adult learners to go into the field of cybersecurity.

**SCIENCE & ENGINEERING INDICATORS | 6.98% of the Massachusetts workforce is employed in S&E occupations**, and 10.35% of Massachusetts's business establishments are industries with high employment in science, engineering and technology (SET) occupations.<sup>+</sup>

**CENTER FOR BRAINS, MINDS, AND MACHINES |** The NSF-supported **Center for Brains, Minds and Machines** is an NSF-funded Science and Technology Center headquartered at MIT, and partnering with Harvard University, that is focused on the interdisciplinary study of intelligence. The center brings together computer scientists, cognitive scientists and neuroscientists to understand intelligence, that is, how the brain produces intelligent behavior and how we may be able to replicate intelligence in machines.

<sup>+</sup> National Science Board, National Science Foundation. 2020. Science and Engineering Indicators 2020: The State of U.S. Science and Engineering. NSB-2020-1. Alexandria, VA. Available at <https://nces.nsf.gov/pubs/nsb20201/>.

### FAST FACTS

**\$550,378,000**

Total NSF awards to Massachusetts in FY19

**\$463,946,000**

Amount invested in fundamental research in Massachusetts in FY19

**\$86,432,000**

Amount invested in STEM education in Massachusetts in FY19

**\$24,160,000**

Amount invested in Massachusettsian startups through NSF's small business program in FY19

### TOP 3 NSF-FUNDED ACADEMIC INSTITUTIONS FOR FY19

**\$115,272,000**

Woods Hole Oceanographic Institution

**\$95,827,000**

Massachusetts Institute of Technology

**\$55,970,000**

Northeastern University

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